

37th Annual Convention of the Society for the Study of Artificial Intelligence and vj g'Simulation of Behaviour

(AISB 2011)

**York, United Kingdom
4-7 April 2011**

Part 1 of 9

Editors:

Dimitar Kazakov

George Tsoulas

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2011) by AISB – The Society for the Study of Artificial Intelligence
and the Simulation of Behaviour
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact AISB
at the address below.

AISB
c/o Dr. Katerina Koutsantoni
4 Windsor Walk, Denmark Hill
London SE5 8AF UK

Phone: 441 273 678 448
Fax: 441 273 671 320

aisb@cogs.susx.ac.uk

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Contents

Symposium Preface <i>Simon O'Keefe</i>	ii
---	----

Invited presentations:

Functional brain architecture underlying eye movements <i>Melanie Burke, Claudia Gonzalez and Graham Barnes</i>	3
--	---

Vision in natural behavior <i>Benjamin W. Tatler</i>	9
---	---

Refereed papers:

A biologically based model of active vision <i>Alex Cope and Kevin Gurney</i>	13
--	----

Multi-modal visual attention for robotics active vision systems - A reference architecture <i>Martin Hulse, Sebastian McBride and Mark Lee</i>	21
---	----

A visual novelty detection filter based on bag-of-words and biologically-inspired networks <i>Y. Gatsoulis, E. Kerr, J.V. Condell, N.H. Siddique and T.M. McGinnity</i>	29
--	----

A modular reinforcement learning model for human visuomotor behavior in a driving task <i>Brian Sullivan, Leif Johnson, Dana Ballard and Mary Hayhoe</i>	33
---	----

Research student papers:

A Dynamical Model of Feature-Based Attention with Strong Lateral Inhibition to Resolve Competition Among Candidate Feature Locations <i>David G. Harrison and Marc De Kamps</i>	43
--	----

Coordination of multi-layered neural computation - a Neural Pipeline approach <i>Rebecca Naylor, Simon O'Keefe, Jim Austin and Netta Cohen</i>	49
---	----

Visual search performance can be enhanced by instructions that alter eye movements <i>David J. Yates and Tom Stafford</i>	55
--	----

37th Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behaviour

(AISB 2011)

**York, United Kingdom
4-7 April 2011**

Part 2 of 9

Editors:

Dimitar Kazakov

George Tsoulas

ISBN: 978-1-62993-964-3

Contents

Session 1 -(9:00, Wednesday 6 April)-

Keynote: <i>An Introduction to CoJACK.....</i>	1
Paolo Busetta	

<i>Procedural Quests: A Focus for Agent Interaction in Role-Playing-Games.....</i>	3
John Grey and Joanna Bryson	

-(10:30 coffee)--

Session 2 -(11:00)- AI algorithms

<i>Playing Tetris Using Bandit-Based Monte-Carlo Planning.....</i>	11
Zhongjie Cai, Dapeng Zhang and Bernhard Nebel	

<i>Determinization in Monte-Carlo Tree Search for the card game Dou Di Zhu.....</i>	17
Edward Powley, Daniel Whitehouse and Peter Cowling	

<i>From game tutorials to game partners using natural language generation techniques.....</i>	25
Luciana Benotti and Nicolás Bertoá	

-(12:30 lunch)--

Session 3 -(14:00)- Intelligent environments and characters

<i>Representing Personality Traits as Conditionals.....</i>	35
Richard Evans	

<i>Social Objects – A framework for social interactions between videogame characters.....</i>	43
Phil Carlisle, Steve Manning and Mark Grimshaw	

<i>Influence Landscapes – From Spatial to Conceptual Representations.....</i>	49
Luke Dicken and John Levine	

<i>SPREE : The Strathclyde Poker Research Environment.....</i>	55
Luke Dicken, Nicky Johnstone, John Levine and Phil Rodgers	

-(15:30 coffee)--

Session 4 -(16:00)- Position papers

<i>Games based learning for Exploring Cultural Conflict.....</i>	61
Lynne Hall, Syaheerah Lutfi, Asad Nazir, John Hodgson, Marc Hall, Christopher Ritter, Susan Jones, Samuel Mascarenhas, Bridget Cooper, Ana Paiva and Ruth Aylett	

<i>Recognition of Emotional Brain Activities in Virtual Reality Environment: A Position Paper.....</i>	71
Fabio Abbattista, Giovanni Attolico, Valeria Carofiglio, Fabio De Felice and Giovanni Dimauro	

-(17:00 plenary session)-

37th Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behaviour

(AISB 2011)

**York, United Kingdom
4-7 April 2011**

Part 3 of 9

Editors:

Dimitar Kazakov

George Tsoulas

ISBN: 978-1-62993-964-3

Contents

Symposium Preface
Y. J. Erden & M. Bishop

Creativity and art: three roads to surprise	1
<i>Margaret Boden</i>	
Anonymity and Evolutionary Art.....	11
<i>Margaret Boden</i>	
On Impact and Evaluation in Computational Creativity: A discussion of the Turing Test and an alternative proposal.....	15
<i>Simon Colton & Alison Pease</i>	
Creative or Not? Birds and Ants Draw with Muscles.....	23
<i>Mohammad Majid al-Rifaie & Mark Bishop</i>	
Object-oriented philosophy – the nature of the relations between humans and computational object.....	31
<i>Leighton Evans</i>	
Multiple Realization and the Computational Mind.....	37
<i>Paul Schweizer</i>	
From Artificial Life to Artificial Embodiment: Using human-computer interfaces to investigate the embodied mind 'as-it-could-be' from the first-person perspective.....	43
<i>Tom Froese, Keisuke Suzuki, Sohei Wakisaka, Yuta Ogai & Takashi Ikegami</i>	
Contextual Affect Modeling and Detection from Open-ended Text-based Dramatic Interaction.....	51
<i>Li Zhang</i>	
The Information Processing Account of Computation.....	58
<i>Nir Fresco</i>	
Autonomy and desire in machines and cognitive agent systems.....	65
<i>Kevin Magill & Yasemin J. Erden</i>	
The Singularity Might Indeed Be Near, But the Next Interesting Level of Intelligence Is Too Far	73
<i>Jiri Wiedermann</i>	
On the State of Superposition and the Parallel or not Parallel Nature of Quantum Computing: a controversy raising point of view.....	80
<i>Michael Nicolaïdis</i>	
Using Ontological Dependence to Distinguish Between Hardware and Software.....	89
<i>William Duncan</i>	
Why is it necessary to build a physical model of hypercomputation?	98
<i>Florent Franchette</i>	

37th Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behaviour

(AISB 2011)

**York, United Kingdom
4-7 April 2011**

Part 4 of 9

Editors:

Dimitar Kazakov

George Tsoulas

ISBN: 978-1-62993-964-3

Symposium on: Computational Models of Cognitive Development

5th April, 2011

Organisers

Frank Guerin, Aberdeen
John Alexander, Aberdeen
Philip Quinlan, York

Programme Committee

(AI/Robotics)	(Psychology)
John Alexander	Andrew Bremner
Luc Berthouze	Philip Quinlan
Frank Guerin	Matthew Schlesinger
Sinan Kalkan	Sylvain Sirois
Norbert Krueger	
Mark Lee	
Honghai Liu	
Jonathan Mugan	
Paulo Santos	
Georgi Stojanov	
Nicholas K Taylor	
Emre Ugur	

Contents

Katherine E. Twomey and Jessica S. Horst	3
All Things Considered: Dynamic Field Theory Captures Effect of Categories on Children's Word Learning	
Anne S. Warlaumont, Gert Westermann, and D. Kimbrough Oller	8
Adult Input Causes Less Precise Imitation in a Neural Network Model of Infant Vowel Perception And Production	
Alexandra Varga and Michiel van Lambalgen	13
Infants' Flexible Closed World Reasoning and Imitation-for-Learning	
Norbert Krüger, Mila Popovic, Leon Bodenhagen, Dirk Kraft and Frank Guerin	23
Grasp Learning by Means of Developing Sensorimotor Schemas and Generic World Knowledge	
Michael Miller	32
Piagetian Autonomous Modeller	
Timothy A. Furze and Brandon Bennett	40
Using the Principles of Classical Conditioning to Learn Event Sequences	

37th Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behaviour

(AISB 2011)

**York, United Kingdom
4-7 April 2011**

Part 5 of 9

Editors:

Dimitar Kazakov

George Tsoulas

ISBN: 978-1-62993-964-3

Table of Contents

Introduction	1
A Memory Structure that Gives Meaning to the Notions of Knowledge and Belief	2
I think I know you: a sharable memory model between agent and human	10
Between Downward Spirals and Habituation: Emotion Intensity in Virtual Agents' Memory Retrieval.....	15
Towards modeling false memory using virtual characters: a position paper	20
A Preliminary Functional Analysis of Memory in the Word Sense Disambiguation Task ...	25
On Memory Systems for Companion Robots: Implementation Methodologies and Legal Implications.....	30
Memory Systems for Cognitive Agents	35
Implementing a data mining approach to episodic memory modelling for artificial companions.....	41

37th Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behaviour

(AISB 2011)

**York, United Kingdom
4-7 April 2011**

Part 6 of 9

Editors:

Dimitar Kazakov

George Tsoulas

ISBN: 978-1-62993-964-3

Table of Contents

Constructing a Reusable Linguistic Resource for a Polyglot Speech Synthesis	1
(<i>Nur-Hana Samsudin and Mark Lee</i>)	
Multi-word Level Context Features: Towards Context Feature Improvement	6
(<i>Azniah Ismail and Suresh Manandhar</i>)	
Using Multilingual Corpora to Extract Semantic Information	11
(<i>Ahmad R. Shahid and Dimitar Kazakov</i>)	

37th Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behaviour

(AISB 2011)

**York, United Kingdom
4-7 April 2011**

Part 7 of 9

Editors:

Dimitar Kazakov

George Tsoulas

ISBN: 978-1-62993-964-3

Introduction	2
<i>Rob Clowes, Steve Torrance and Ron Chrisley</i>	
World-Related Integrated Information: Enactivist and Phenomenal Perspectives	7
<i>Igor Aleksander and Mike Beaton</i>	
A Role for Consciousness in Action Selection.....	15
<i>Joanna J. Bryson</i>	
High-Dimensional Perceptual Signals and Synthetic Phenomenology	20
<i>Antonio Chella and Salvatore Gaglio</i>	
Information Integration, Data Integration and Machine Consciousness.....	24
<i>David Gamez</i>	
A model of primitive consciousness in autonomously adaptive system under a framework of reinforcement learning	31
<i>Yasuo Kinouchi, Yoshihiro Kato, Hiroki Hayashi, Yusuke Katsumata, Kazuhisa Kitakaze, and Shoji Inabayashi</i>	
Development and situated cognition: Preconditions for machine consciousness.....	36
<i>Riccardo Manzotti</i>	
A Cognitive Neuroscience-inspired Codelet-based Cognitive Architecture for the Control of Artificial Creatures with Incremental Levels of Machine Consciousness.....	4
<i>Klaus Raizer, André L. O. Paraense and Ricardo R. Gudwin</i>	
Self System in a Model of Cognition.....	51
<i>Uma Ramamurthy and Stan Franklin</i>	
Consciousness, Meaning and the Future Phenomenology.....	55
<i>Ricardo Sanz, Carlos Hernández and Guadalupe Sánchez</i>	
Can Functional and Phenomenal Consciousness Be Divided?.....	61
<i>John G Taylor</i>	
Would a super-intelligent AI necessarily be (super-)conscious?.....	67
<i>Steve Torrance</i>	

37th Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behaviour

(AISB 2011)

**York, United Kingdom
4-7 April 2011**

Part 8 of 9

Editors:

Dimitar Kazakov

George Tsoulas

ISBN: 978-1-62993-964-3

Social Networks And MultiAgent Systems

3rd Symposium

<http://snamas2011.res-ear.ch>

Symposium Chairs

Matthias Mailliard	CEMAGREF, France
Clara Smith	UNLP and UCALP, Argentina
Frédéric Amblard	IRIT, France
Samuel Thiriot	INRIA, France

Programme Committee

Luis Antunes	Univ. Lisbon, Portugal
Guido Boella	University of Turin
Cristiano Castelfranchi	ISTC-CNR Rome, Italy
Edmund Chattoe-Brown	Univ. Leicester, UK
Rosaria Conte	ISTC-CNR Rome, Italy
Terrill Frantz	Carnegie Mellon University, USA
Jeremy Pitt	Imperial College London, UK
Camille Roth	CNRS-EHESS, Paris, France
Antonino Rotolo	University of Bologna, Italy
Giovanni Sartor	Univ. Bologna, Italy
Jaime Simão Sichman	Universidade de São Paulo, Brazil
Serena Villata	University of Turin

Contents

Analysis of the power network among the actors of a social organization <i>Paul Chapron, Christophe Sibertin-Blanc, Françoise Adreit</i>	p.2
The Logic of Power. How my Power Becomes his Power <i>Cristiano Castelfranchi</i>	p.8
How detailed should social networks be for labor market's models? <i>Zach Lewkowicz, Samuel Thiriot and Philippe Caillou</i>	p.14
Considering baseline homophily when generating spatial social networks <i>Sascha Holzhauer, Friedrich Krebs and Andreas Ernst</i>	p.20
Selected Models for Agent-based Simulation of Social Networks <i>Enrico Franchi, Federico Bergenti and Agostino Poggi</i>	p.27
Time-Varying Graphs and Social Network Analysis: Temporal Indicators and Metrics <i>Nicola Santoro, Walter Quattrociocchi, Paola Flocchini, Arnaud Casteigts and Frederic Amblard</i>	p.33
Adaptive Security Scheme for Open Networks <i>Julia Schaumeier, Jeremy Pitt, Moez Draief and Pallapa Venkataram</i>	p.39
Rooting opinions in the minds: a cognitive and computational model of opinions and their dynamics <i>Francesca Giardini, Walter Quattrociocchi and Rosaria Conte</i>	p.45
Multilevel and Agent-Based Modelling in the Analysis of Differential School Effectiveness <i>Mauricio Salgado and Elio Marchione</i>	p.50

37th Annual Convention of the Society for the Study of Artificial Intelligence and the Simulation of Behaviour

(AISB 2011)

**York, United Kingdom
4-7 April 2011**

Part 9 of 9

Editors:

Dimitar Kazakov

George Tsoulas

ISBN: 978-1-62993-964-3

TABLE OF CONTENTS

Preface	i
Turing's misunderstood imitation game and IBM's Watson success	1
Human Computer Visual Test <i>Yaman KAYIHAN</i>	6
Reference Object Selection Intelligence (ROSI) Test <i>Antony Galton, Ed Keedwell, and Mike Barclay</i>	13
Can Machines Think? A Proposal for an Augmented Scientific Turing Test <i>Patrick Fogarty</i>	15
Towards the Measurement of Plasticity and Innateness in Artificial Agents <i>C. White, D. Bell</i>	21
Knowing me, knowing you: On the relevance of a mind reading test for general testing of intelligence <i>Elpida S. Tzafestas</i>	28
Le Petit Challenge <i>Graham Wallis</i>	31